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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/879,322	06/20/97	HODGSON	A 14136

EXAMINER	
DASTOURI,M	
ART UNIT	**PAPER NUMBER**
2723	5

LM02/0331

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DATE MAILED: 03/31/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
08/879,322	Hodgson et al
Examiner	**Group Art Unit**
Mehrdad Dastouri	2723

☒ Responsive to communication(s) filed on *Feb 16, 1999*

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *Three* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-12* is/are pending in the applicat

Of the above, claim(s) *Claim 11* is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *Claims 1-10 and 12* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed, January 6, 1999, has been entered and made of record.

2. Objection to disclosure has been withdrawn in view of the Applicant's amendment.

3. Applicants' arguments with regards to Claims 1-10 have been fully considered but they are not persuasive.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971). The Examiner's conclusion of obviousness takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made as evidenced by the prior arts relied upon (see Office Action Paper No. 3).

Applicant argues in essence that the patents to Gravely, Hed and Saxena are non-analogous. The Examiner disagrees for the following reasons:

Graveley (U.S. 3,575,287) disclose a tray that is usable for meat and foodstuffs other than meat (Column 4, Lines 16-20). This encompasses food products which includes fruits and fruit particles in a matrix.

Hed (U.S. 5,301,090) discloses general purpose luminaire enclosed in housing (light box) with multiplicity of groups of light emitters of different colors having switches for adjusting the intensity of the light, and independently-adjustable light-producing sources. Hed disclosure precisely fulfil claim limitations. The luminaires as disclosed by Hed (U.S. 5,301,090) are usable in any environment chosen by one ordinary skill in the art.

With regards to Saxena (U.S. 5,212,637), both Tao's and Saxena's inventions are relevant to the processing of images and in this respect they are highly analogous. Furthermore, the concept of illuminating an object from the bottom is extremely well known in numerous fields specially in the analysis of the food products. As an example, Conners (U.S. 5,761,070) and Heck (U.S. 5,845,002) teach this feature.

It should be noted that claim limitations such as sample tray for holding fruit particles, location of light box in a cabinet, switches for adjusting the intensity of the light, and independently-adjustable light-producing sources are extremely well known in the art. These extremely well known features simply can not be a basis for patentability.

4. Applicant's arguments with regard to the newly added limitation of measurement of fruit particles in a matrix in the amended Claims 1-10 and new Claim 12, are deemed to be moot in view of the new grounds of rejection. This office action is FINAL.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) a patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable by Tao (U.S. 5,533,628), further in view of Graveley (U.S. 3,575,287) and Bloss (U.S. 4,692,024).

Regarding Claim 1, Tao discloses an apparatus for measurement of the fruit particles comprising:

a substantially opaque cabinet (FIG.1; Column 7, Lines 14-19. The color sorting apparatus 5 includes the housing cabinet that encloses the camera and light source.); a camera in the upper portion of said cabinet (FIGs. 1, 4 and 6; Column 7, Lines 38-40; Column 8, Lines 12-23); a light source in said cabinet (FIG. 1; Column 7, Lines 34-37; Column 8, Lines 36-46); and a computer with image analyzing software (FIGs. 1, 2 and 3; Column 7, Lines 40-67, Column 8, Lines 1-11; Column 8, Lines 47-67, Column 9, Lines 1-14).

Tao does not disclose an apparatus for measurement of the fruit particles in a matrix comprising a sample tray. Tao utilizes speed belt 7 and wheels 9 as a provision for supporting fruits. Graveley disclose a sample tray utilized as a container for holding food products (FIG. 1; Column 2, Lines 3-24). Neither Tao nor Graveley disclose measurement of fruit particle in a matrix. Bloss disclose measurement of fruit particle in a matrix (Column 3, Lines 43-53). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a tray as a part of an apparatus for measurement of the fruit particles in a matrix because it will be used for supporting the fruit particles in a matrix during the image acquisition,

and consider the option of measurement of fruit particle in a matrix because it will comprise measurement of a wider range of fruit particles and food products.

Regarding Claim 3, Tao disclose an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises an incident light source within the cabinet (FIG. 1; Column 7, Lines 34-37; Column 8, Lines 36-46).

Regarding Claim 6, Tao (explicitly), Graveley and Bloss do not disclose an apparatus for measurement of the fruit particles in a matrix wherein the inside of the cabinet is non-reflecting. Characteristics of the inside surface of a cabinet is the decision based upon designer's preference. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a cabinet with non-reflecting inside surface because it will minimize light scattering inside the cabinet and will prevent degrading of the image quality due to light scattering.

Regarding Claim 7, neither Tao nor Bloss disclose an apparatus for measurement of the fruit particles in a matrix wherein the sample tray comprises a light-transmitting bottom. Graveley disclose a sample tray with light transmitting bottom utilized as a container for food products (FIG. 1; Column 2, Lines 3-24). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a light transmitting (transparent) tray as a part of an apparatus for measurement of the fruit particles in a matrix because it will have the property of transmitting light so that objects lying on the tray are seen clearly, and their image are intelligibly obtained when subjected to the incident light of the bottom mounted light box.

7. Claims 2, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable by Tao (U.S. 5,533,628) further in view of Bloss (U.S. 4,692,024), Graveley (U.S. 3,757,287), and Saxena (U.S. 5,212,637).

Regarding Claim 2, Tao, Graveley and Bloss do not disclose an apparatus for measurement of the fruit particles in a matrix with a light source comprising of a light box in the lower portion of the apparatus housing cabinet. Saxena discloses an image processing apparatus comprising a light box in the lower portion of the apparatus housing cabinet (FIG. 1; Column 3, Lines 3-5). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a light box in the lower portion of the apparatus housing cabinet for measurement of the fruit particles in a matrix because when the objects lying on the tray are subjected to the incident light of the bottom mounted light box, they will be seen clearly, and their images are obtained appropriately.

Regarding Claim 8, Tao, Bloss, Graveley and Saxena do not disclose an apparatus for measurement of the fruit particles in a matrix wherein the apparatus further comprises a light box cover. Configuration of the internal parts of the cabinets is based upon the discretion of the designer. Conventionally, cabinets are manufactured of modular parts. The cover for an internal component such as a light box is considered one of the basic elements in composite modular structure of the cabinets, and has been frequently installed in electrical distribution boards (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to provide a cabinet with cover for the light box because it will enclose components with distinct functions in separate segments.

Regarding Claim 9, Tao, Bloss, Graveley and Saxena do not disclose an apparatus for measurement of the fruit particles in a matrix wherein the apparatus further comprises a sample tray guide. Configuration of the internal parts of the cabinets is based upon the discretion of the designer. Conventionally, cabinets are manufactured of modular parts. A cover with guides for installation of another component like a tray is considered one of the normal elements in composite modular structure of the cabinets, and has been frequently installed in electrical distribution boards (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a cabinet with a sample tray guide because it is the conventional design for the installation of the removable components.

8. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable by Tao (U.S. 5,533,628) further in view of Bloss (U.S. 4,692,024), Graveley (U.S. 3,575,287) and Hed (U.S. 5,301,090).

Regarding Claim 4, Tao, Bloss and Graveley do not disclose an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises switches for adjusting the intensity of the light. Hed discloses a light source comprising switches for adjusting the intensity of the light (FIGs. 5 and 7; Column 4, Lines 4-19; Column 12, Lines 11-16). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus for measurement of the fruit particles in a matrix wherein the light

source comprises switches for adjusting the intensity of the light because it will provide the capability of obtaining the images of samples under different illumination conditions to optimize the quality of images and prevent the formation of shadows.

Regarding Claim 5, Tao, Bloss and Graveley do not disclose an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises multiple, independently-adjustable, light-producing sources. Hed discloses a light source comprising multiple, independently-adjustable, light-producing sources (FIGs. 5 and 7; Column 4, Lines 4-13; Column 13, Lines 51-68, Column 14, Lines 1-15). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises multiple, independently-adjustable, light-producing sources because it will provide flexibility of controlling the color balance and creating the desired color by adding primary colors at the desired ratio to yield the desired chromaticity.

With regards to Claim 10, arguments analogous to those presented for Claims 1, 3, 4, 6 and 7 are applicable to Claim 10.

With regards to Claim 12, arguments analogous to those presented for Claim 1 are applicable to Claim 12.

Other prior art cited

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,761,070 to Conners et al is cited for an automatic color and grain sorting of materials utilizing a light source from bottom for illumination of man-made or natural materials.

U.S. Patent 5,095,204 to Novini is cited for a machine vision inspection system and method for transparent containers utilizing a light source from bottom for illumination of transparent containers.

U.S. Patent 5,845,002 to Heck et al is cited for a method and apparatus for detecting surface features of translucent objects utilizing a light source from bottom for illumination of objects such as a citrus fruit.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438.

The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached at (703)308-6604.

Any response to this action should be mailed to:

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or faxed to:

(703) 308-9051, (for formal communications intended for entry)

or:

(703) 308-5397 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)305-3900.

MD

Mehrdad Dastouri
Patent Examiner
Group Art Unit 2723
March 25, 1999

Jon Chang
Jon Chang
Primary Examiner